

Sub Jan 27, 2017

Work Order ID 154736

154736

Page 1

Monday, December 19, 2016 5:25:06 PM

Item ID: D4634-143 Accept *N900040100* Setup Start *NS1*
 Revision ID: Stop *NS2*
 Item Name: Middle, Center Ceiling Replacement Panel Assembly
 Start Date: 1/12/2017 Start Qty: 1.00 *1* Cust Item ID:
 Required Date: 1/18/2017 Req'd Qty: 1.00 *1* Customer:
 Reference:

Approvals: Process Plan: VS Date: 12/12/20 Tooling: _____ Date: _____ Run Start *NR1*
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop *NR2*

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

Draw Nbr	Revision Nbr
D4634	G

100

0.00

100

HandThermo

Memo

0.14

Hand Finishing Thermoforming

Pick Kit

JAN 12 2017

DAS
6
9-89

110

0.00

110

Small Fab

Memo

0.22

Small Fab

Assemble as per Dwg D4634-143

1- Scuff bonding surface to eliminate in-perfections and increase bonding and clean with wash& wipe

2- Locate and glue down Channel Assy, angles, brackets, and mounting pads using 3M Plastic welder II.

Batch # M135436

Expiry Date Feb 2017

3- Apply labels as per Dwg. and seal with 3M 3950 edge sealer

Shms
1/11/19

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		☐ OTHER : _____							

Work Order ID 154736

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154736

Page 2

Item ID: D4634-143 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Middle, Center Ceiling Replacement Panel Assembly
Start Date: 1/12/2017 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 1/18/2017 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC5- Inspect part completeness to step on W/O	0.00							
120									
QC	Memo	0.00							DAS 9 9-89
Quality Control									
130	Identify as per dwg & Stock Location: _____	0.00							
130									
Packaging	Memo	0.00							Smb 17/1/16
Packaging									
140	QC21- Final Inspection - Work Order Release	0.00							
140									
QC	Memo	0.02							DAS 21 9-89
Quality Control									JAN 2 6 2017

DAS
21
9-89

JAN 2 6 2017

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause				FAULT CATEGORY			
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong		
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions		
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance		
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect		
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing		
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved		
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing		
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled	☐ Finish		
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread		
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence		
Past Expiry Date ☐	☐ Manufacturing Process	OTHER : _____					
Misidentified ☐	☐ Past Due						

Picklist Print

Monday, December 19, 2016 5:25:10 PM

Page 1
13

Work Order ID: 154736

154736

Parent Item: D4634-143

D4634-143

Parent Item Name: Middle, Center Ceiling Replacement Panel Assembly

Start Date: 1/12/2017

Required Date: 1/18/2017

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP Rev. A 12/08/09 New Issue DL
12/11/08 Document release DL VERIFIED BY:JLM
Dwg Update DL verf: DD
DL
DL
DL
IPP Rev B
IPP Rev C 13/07/09
IPP Rev D Dwg Update 13/12/23
IPP REV E Dwg update 14/01/09
IPP Rev F Dwg. update 14/02/03
IPP Rev G Dwg. Update 15/01/27 DL

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D4647-1		Manufactured	No			100	Each	5.0000	1	1			

D4647-1

Doubler

Location	Loc Qty	Loc Code
MF004	5	
129251	5	

JAN 12 2017
DAS
6
9-89

D5021-3

Manufactured No

100 Each 2.0000 1

D5021-3

Foam, Center Panel, Middle

Location	Loc Qty	Loc Code
ST479a	2	
123922	2	

JAN 12 2017
DAS
6
9-89

MS20426AD3-4

Purchased No

100 Each 8,977.000 4

MS20426AD3-4

RIVET

Location	Loc Qty	Loc Code
CCK004	4885	
m136444	4885	
GA	5	
m131697	5	
ST312	4087	
m134294	4087	

JAN 12 2017
DAS
6
9-89

m136182

4

CCR26455-3 03

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition			
				Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
OTHER : ☐					

Picklist Print

Monday, December 19, 2016 5:25:10 PM

Page 2

Work Order ID: 154736

154736

Parent Item: D4634-143

D4634-143

Parent Item Name: Middle, Center Ceiling Replacement Panel Assembly

Start Date: 1/12/2017

Required Date: 1/18/2017

Start Qty: 1.00

Required Qty: 1.00

MS20426AD4-6

Purchased

No

100

Each

675.0000

4

4

MS20426AD4-6

Rivet

**

JAN 12 2017

DAS
6
9-89

Location

Loc Qty

Loc Code

GA

85

M134502

85

ST311

590

M134502

590

MS21059L08

Purchased

No

100

Each

103.0000

2

2

MS21059L08

Nut

**

JAN 12 2017

DAS
6
9-89

Location

Loc Qty

Loc Code

ST300

103

m134634

3

m134943

100

D4634-3

Manufactured

No

100

Each

0.0000

1

1

D4634-3

Middle, Center Ceiling Panel

D4636-5

Manufactured

No

100

Each

41.0000

2

2

D4636-5

Bracket

**

JAN 12 2017

DAS
6
9-89

Location

Loc Qty

Loc Code

ST115

41

149102

41

D4664-5

Manufactured

No

100

Each

31.0000

6

6

D4664-5

Spacer

**

JAN 12 2017

DAS
6
9-89

Location

Loc Qty

Loc Code

MF004

31

149152

31

Monday, December 19, 2016 5:25:11 PM

Shop Packet Print

Page 2

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval 	
Description Work Order Deviation				Disposition					
								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY							
Environment	☐	No Re-verification	☐	Pressure/Forced	☐	Temperature/Cure	☐	Power Loss/Surge	☐	Positioned Wrong
Design	☐	Operator	☐	Bending	☐	Set-up	☐	Folio/Program	☐	Outside Dimensions
Doc/Data	☐	Offset/Setup	☐	Centre Not Concentric	☐	BOM/Route	☐	Grain	☐	Over/Under tolerance
Equip/Tooling	☐	Supplier	☐	Cracks	☐	Broken/Damage/Defect	☐	Weld	☐	Part Incorrect
Handling/Pre	☐	Training	☐	Crimp/Kink/Ripple/Wave	☐	Inspection Incomplete/Unqualified	☐	Wrong Stock Pulled	☐	Part Lost/Missing
Material	☐	Use for Testing	☐	Cuffs	☐	Contamination	☐	Out of Sequence	☐	Part Moved
Internal Transport	☐	Poor Information	☐	Crushing	☐	Countersink	☐	Off-set	☐	Drawing
Tribal Knowledge	☐	Rushing	☐	Heat Treat	☐	Cut Too Short	☐	Mislabeled	☐	Finish
LOA	☐	Product Improvement	☐	Wave/Twist in Tube	☐	Instructions Incomplete/Unclear	☐	Fit/Function	☐	Misread
Substation	☐	Process Improvement	☐	Marks/Chatter	☐	Drill Holes	☐	Misaligned/off center	☐	Turning Sequence
Past Expiry Date	☐	Manufacturing Process	☐	OTHER :						
Misidentified	☐	Past Due	☐							

Picklist Print

Monday, December 19, 2016 5:25:11 PM

Work Order ID: 154736

154736

Parent Item: D4634-143

D4634-143

Parent Item Name: Middle, Center Ceiling Replacement Panel Assembly

Start Date: 1/12/2017

Required Date: 1/18/2017

Start Qty: 1.00

Required Qty: 1.00

D4712-1 Manufactured No

100 Each 18.0000 2 2

D4712-1

Bracket

**

JAN 12 2017

DAS
6

9-89

Location

Loc Qty

Loc Code

MF004

18

125020

7

149103

11

D4732-21 Manufactured No

100 Each 10.0000 1 1

D4732-21

Label

**

JAN 12 2017

DAS
6

9-89

Location

Loc Qty

Loc Code

MF005

10

123210

10

D4732-25 Manufactured No

100 Each 11.0000 1 1

D4732-25

Label

**

JAN 12 2017

DAS
6

9-89

Location

Loc Qty

Loc Code

MF005

11

120073

1

123212

10

MPNY-750S-9-C Purchased No

100 Each 747.0000 3 3

MPNY-750S-9-C

Mounting Pad

**

JAN 12 2017

DAS
6

9-89

Location

Loc Qty

Loc Code

ST569

747

M130423

747

DQA: _____ Date: _____

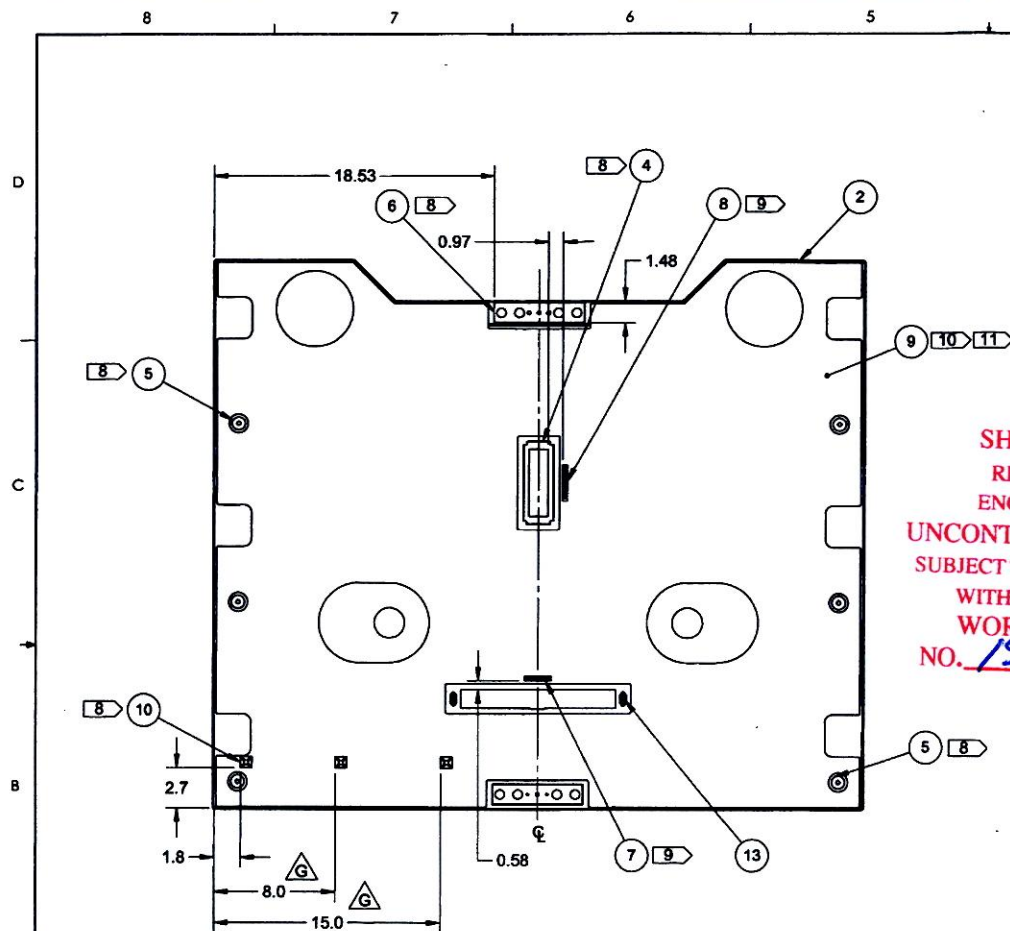


WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date : _____		Step #: _____		QTY Effective : _____			MRB (QS1042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐	OTHER : _____			



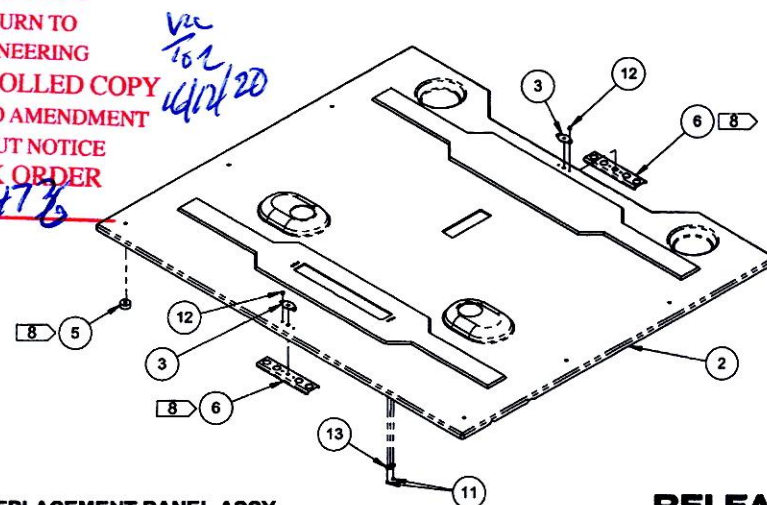
D4634-143 MIDDLE, CENTER CEILING REPLACEMENT PANEL ASSY

NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: N/A
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A
- 8) APPLY A BEAD (0.20 TO 0.30 WIDE) OF DEVCON PLASTIC WELDER II (0.25 INSIDE OF BOTH EDGES OF PART) TO BOND D4647-1, D4664-5 & MPNY-750S-9C.
- 9) WAIT FOR 2 TO 4 HOURS FOR FUNCTIONAL CURE. LOCATE D4647-1 IN LINE WITH RECTANGULAR OPENING
- 10) LOCATE LABELS AS SHOWN, SEAL LABELS USING 3950 EDGE SEALER OVER LABEL TOP SURFACE
- 11) APPLY AN EVEN COAT OF 3M SCOTCH WELD 1300L CONTACT ADHESIVE TO BOND D5021-3 FOAM CORE TO INSIDE OF PANEL
- 12) CENTER D5021-3 FOAM ON D4634-3

ITEM	QTY -143	P/N	DESCRIPTION
1	X	D4634-143	MIDDLE, CENTER CEILING REPLACEMENT PANEL ASSY
2	1	D4634-3	MIDDLE, CENTER CEILING PANEL
3	2	D4636-5	BRACKET
4	1	D4647-1	DOUBLER
5	6	D4664-5	SPACER
6	2	D4712-1	BRACKET
7	1	D4732-21	LABEL
8	1	D4732-25	LABEL
9	1	D5021-3	FOAM, CENTER PANEL, MIDDLE
10	3	MPNY-750S-9-C	MOUNTING PAD
11	4	MS20426AD3-(4)	RIVET, SOLID, CSK
12	4	MS20426AD4-(6)	RIVET, SOLID, CSK
13	2	MS21059L08	NUT PLATE

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 15476



RELEASED

2015 JAN 26

DESIGN	RF	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	RF		
CHECKED	AK	DRAWING NO.	REV. G
MFG. APPR.	DL	D4634	SHEET 8 OF 17
APPROVED	HS	TITLE	SCALE
DE APPR.	DS	CENTER CEILING PANELS	NTS
DATE	14.11.28	COPYRIGHT © 2012 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR REPRODUCED IN ANY MANNER WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD	

WORK ORDER NON-CONFORMANCE / UPDATE



Work Order update only ☐

Work Order: _____		DISPOSITION		AGAINST DEPARTMENT/PROCESS					
Part No. _____		Rework ☐		Skid-tube ☐	Cross tube ☐	Water Jet ☐	Engineering ☐		
NCR No. _____		Scrap ☐		Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐		
		Use-as-is ☐		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐		
		Suspected Unapproved ☐		Large Fab ☐	Composite ☐	Supplier ☐			
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval	
Description Work Order Deviation				Disposition					
THIS COPY IS FOR THE MRB ONLY IT IS NOT TO BE USED FOR ANY OTHER PURPOSE IT WILL BE DESTROYED AFTER THE MRB MEETING WORK ORDER NUMBER: _____								Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	☐ No Re-verification	☐ Pressure/Forced	☐ Temperature/Cure	☐ Power Loss/Surge	☐ Positioned Wrong				
Design ☐	☐ Operator	☐ Bending	☐ Set-up	☐ Folio/Program	☐ Outside Dimensions				
Doc/Data ☐	☐ Offset/Setup	☐ Centre Not Concentric	☐ BOM/Route	☐ Grain	☐ Over/Under tolerance				
Equip/Tooling ☐	☐ Supplier	☐ Cracks	☐ Broken/Damage/Defect	☐ Weld	☐ Part Incorrect				
Handling/Pre ☐	☐ Training	☐ Crimp/Kink/Ripple/Wave	☐ Inspection Incomplete/Unqualified	☐ Wrong Stock Pulled	☐ Part Lost/Missing				
Material ☐	☐ Use for Testing	☐ Cuffs	☐ Contamination	☐ Out of Sequence	☐ Part Moved				
Internal Transport ☐	☐ Poor Information	☐ Crushing	☐ Countersink	☐ Off-set	☐ Drawing				
Tribal Knowledge ☐	☐ Rushing	☐ Heat Treat	☐ Cut Too Short	☐ Mislabelled	☐ Finish				
LOA ☐	☐ Product Improvement	☐ Wave/Twist in Tube	☐ Instructions Incomplete/Unclear	☐ Fit/Function	☐ Misread				
Substation ☐	☐ Process Improvement	☐ Marks/Chatter	☐ Drill Holes	☐ Misaligned/off center	☐ Turning Sequence				
Past Expiry Date ☐	☐ Manufacturing Process								
Misidentified ☐	☐ Past Due	OTHER :							